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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,539	09/12/2003	Jin-Ho Kim	25611-000070/US	6421
30593	7590	02/27/2004	EXAMINER	
HARNES, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			TRINH, HOA B	
			ART UNIT	PAPER NUMBER

.2814

DATE MAILED: 02/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/660,539	Applicant(s) KIM ET AL.	
	Examiner Vikki H Trinh	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5 is/are allowed.
- 6) ☒ Claim(s) 6 and 7 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0204</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Akram et al. (5,674,785).

Akram et al. (5,674,785) discloses a method of making a semiconductor package having the steps of:

As to claim 6, forming a plurality of solder bump pads 14 (fig. 10) on one surface of a board 12; forming a plurality of board pads 14 (col.5, lines 13-15) on the one surface of the board; placing at least one chip 18 having a plurality of bonding pads 24 (col. 4, lines 24-29) in an aperture 46 of the board 12, wedge bonding (col. 4, lines 22-23) at least one end of a plurality of bonding wires 32 to electrically connect the bonding pads to the plurality of board pads; encapsulating 36 (col. 6, lines 22-25) the at least one chip, the plurality of bonding wires and the plurality of board pads on the one surface of the board; and forming a plurality of solder bumps 16 on the plurality of solder bump pads 14. See also fig. 5A

As to claim 7, wherein the height of each solder bump 16 is greater than the height of the encapsulating part extending over the one surface of the board 12. See fig. 1A and fig.

10.

Allowable Subject Matter

3. Claims 1-5 are allowed.
4. Claims 8-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The following is an examiner's statement of reasons for allowance: The prior art of record does not disclose or fairly suggest neither in singly nor in combination a device and method of making the semiconductor device having a plurality of contact pads formed on the upper surface of the board, and electrically connected to the solder bump pads; at least one chip having a plurality of bonding pads, disclosed in the aperture; a plurality of bonding wires electrically connecting the bonding pads to the board pads, at least one end of the bonding wires being bonded to the bonding pads or the board pads by wedge bonding; an encapsulation part provided on the lower surface of the board for encapsulating the at least one chip, the plurality of bonding wires and the plurality of board pads; and a plurality of solder bumps formed on the plurality of solder bump pads..

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

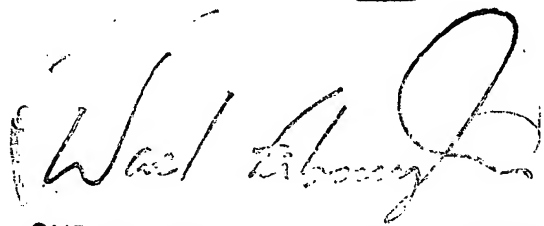
Conclusion

1. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Vikki Trinh whose telephone number is (571) 272-1719.

Art Unit: 2814

The Examiner can normally be reached Mon-Tuesday, Thurs-Friday, 7:30 AM - 6:00 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Wael Fahmy, can be reached at (571) 272-1705.

Vikki Trinh,
Patent Examiner
AU 2814

A handwritten signature in black ink, appearing to read "Wael Fahmy", is written over a faint, circular official stamp.

SUPERVISORY PRIMARY EXAMINER
TECHNOLOGY CENTER 2800